Appl. No. 09/503,140
Amdt. Dated July 17, 2006

## AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended)   A readout controlling apparatus for controlling reading conditions while reading data from a recording medium, comprising:

an error correcting means for correcting errors in said read data;

an error rate calculating means for calculating an error rate of said errors in said read data; and

a control means for dynamically controlling and adjusting reading conditions;

wherein the control means performs a control operation so as to determine a parameter that makes an error rate smaller before or during playback of the recording medium, ~~or if a condition of playback deteriorates,~~ the control operation ~~adjusting~~ taking the current value of the parameter signal and applying a first new parameter signal ~~determined by calculation of an amount of error rate variation, the parameter signal adjustment being based upon a difference from an optimal value and error rate calculations periodically made above and below the optimum value~~ which has been adjusted above said current value of the parameter signal, applying the first new parameter signal, and measuring the resultant error rate, and then applying a second new parameter signal adjusted below said current value of the parameter signal, applying the second new parameter signal, and measuring the resultant error rate, the control means finally applying the one of the first and the second new parameter signals that makes an error rate smaller.

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2. (Previously Presented)  A readout controlling apparatus as set forth in claim 1,

wherein:

said data is coded in units of code blocks; and

said error correcting means corrects errors in said code blocks;

said error rate calculating means calculates said error rate by either determining a

number of bytes of data in which said error correction was correctly carried out and a number

of bytes of data in which said error correction was not correctly carried out, or a number of

code blocks in which said error correction was correctly carried out, and a number of blocks

wherein said error correction was not correctly carried out.


3. (Previously Presented)  A readout controlling apparatus as set forth in claim 2,

wherein

said error rate calculating means calculates said error rate by using either cumulative

addition of the number of bytes of data in which said error correction was correctly carried

out, and the number of bytes of data in which said error correction was not correctly carried

out, or the number of code blocks in which said error correction was correctly carried out,

and the number of blocks in which said error correction was not correctly carried out for at

least one code block.


4. (Cancelled)

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5. (Previously Presented)  A readout controlling apparatus as set forth in claim 2, wherein:

said data comprises information arranged in rows and columns, and wherein an inner code parity is determined for the rows, and an outer code parity is determined for the columns and

said error correcting means performs inner code error correction using said inner code parity and outer code error correction using said outer code parity.

6. (Previously Presented)  A readout controlling apparatus as set forth in claim 5, further comprising:

a memory means for storing the results of cumulative addition of said inner code error corrections and

a memory means for storing the results of cumulative addition of said outer code error corrections.

7. (Previously Presented)  A readout controlling apparatus as set forth in claim 6, wherein said error rate calculating means reads the cumulative addition values stored in the memory means.

8-18. (Cancelled)

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19. (Currently Amended)   A recorder for recording data on a storage medium,
comprising:

a reading means for reading recorded data;

an error correcting means for correcting errors in data read by the reading means;

an error rate calculating means for calculating an error rate; and

a control means for dynamically controlling and adjusting reading conditions:

wherein the control means performs a control operation so as to determine a
parameter that makes an error rate smaller before or during playback of the recording
medium, or if a condition of playback deteriorates, the control operation ~~adjusting~~ taking a
current value of the parameter signal and applying a first new parameter signal ~~determined by~~
~~calculation of an amount of error-rate variation, the parameter-signal adjustment being based~~
~~upon a difference from an optimal value and error rate calculations periodically made above~~
~~and below the optimum value~~ which has been adjusted above said current value of the
parameter signal, applying the first new parameter signal, and measuring the resultant error
rate, and then applying a second new parameter signal adjusted below said current value of
the parameter signal, applying the second new parameter signal, and measuring the resultant
error rate, the control means applying the one of the first and the second new parameter
signals that makes an error rate smaller.

20. (Currently Amended)   A readout controlling method for controlling reading
conditions while reading data from a recording medium comprising the steps of:

applying error correction to data read from the recording medium;

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calculating an error rate of said error correction step; and

dynamically controlling and adjusting the reading conditions;

wherein the step of controlling and adjusting the reading conditions includes performing a control operation so as to determine a parameter that makes an error rate smaller before or during playback of the recording medium, ~~or if a condition of playback deteriorates,~~ the control operation ~~adjusting~~ <u>taking the current value of the parameter signal and applying</u> a <u>first new</u> parameter signal ~~determined by calculation of an amount of error rate variation, the parameter signal adjustment being based upon a difference from an optimal value and error rate calculations periodically made above and below the optimum value~~ <u>which has been adjusted above said current value of the parameter signal, applying the first new parameter signal, and measuring the resultant error rate, and then applying a second new parameter signal adjusted below said current value of the parameter signal, applying the second new parameter signal, and measuring the resultant error rate, the control means finally applying the one of the first and the second new parameter signals that makes an error rate smaller.</u>


Claims 21 - 27. (Cancelled)


28. (Previously Presented) The readout controlling apparatus of claim 1, wherein the error correction means includes a plurality of registers and a plurality of counters with at least one reset signal generator, and

wherein the error correcting means employs a block number control circuit that changes a cumulative number of blocks based on a cumulative block number change signal.

29. (Previously Presented) The readout controlling apparatus of claim 1, wherein the error correcting means includes a plurality of counters and registers with at least one reset signal generator, and

the readout controlling apparatus further comprises a selector electrically connected between the counters and registers.

30. (Previously Presented) The recorder for recording data of claim 19, wherein the error correcting means employs a block number control circuit that changes a cumulative number of blocks based on a cumulative block number change signal.

31. (Previously Presented) The recorder for recording data of claim 19, wherein the error correcting means includes a plurality of counters and registers with at least one reset signal generator and a selector electrically connected between the counters and registers.

32. (Previously Presented) The readout controlling method of claim 28, wherein the error correcting means includes a plurality of counters and registers with at least one reset signal generator, and

wherein the error correcting means employs a block number control circuit that changes a cumulative number of blocks based on a cumulative block number change signal.

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33. (Previously Presented) The readout controlling method of claim 28, wherein the error correcting means includes a plurality of counters and registers with at least one reset signal generator, and

further comprising providing a selector electrically connected between the counters and registers.

34. (Currently Amended) A player, comprising:

reproducing means for reproducing data from a recording medium;

error correcting means for correcting error of said reproduced data;

error rate calculating means for calculating an error rate of said error correction; and

control means for controlling the reading conditions;

wherein the control means performs a control operation so as to determine a parameter that makes an error rate smaller before or during playback of the recording medium, ~~or if a condition of playback deteriorates,~~ the control operation ~~adjusting~~ taking the current value of the parameter signal and applying a first new parameter signal ~~determined by calculation of an amount of error rate variation, the parameter signal adjustment being based upon a difference from an optimal value and error rate calculations periodically made above and below the optimum value~~ which has been adjusted above said current value of the parameter signal, applying the first new parameter signal, and measuring the resultant error rate, and then applying a second new parameter signal adjusted below said current value of the parameter signal, applying the second new parameter signal, and measuring the resultant

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error rate, the control means finally applying the one of the first and the second new

parameter signals that makes an error rate smaller.


35.   (Previously Presented)   A readout controlling apparatus as set forth in claim 1,

wherein:

the recording medium is an optical disk; and

the control means controls at least one of an amount of light of a laser diode, a

frequency of a signal superimposed on a signal before being applied to a laser diode, a gain of

a photodiode, filter characteristics, focus conditions, tracking conditions. RF signal

characteristics, an inclination of the optical disk, a speed of the optical disk, and servo control

of a spindle motor.